## AMENDMENTS TO THE CLAIMS

Following is a listing of all claims in the present application, which listing supersedes all previously presented claims:

Listing of Claims:

1. (Currently Amended) A method for manufacturing a flexible MEMS transducer, comprising:

forming a sacrificial layer on a flexible substrate <u>of the flexible MEMS transducer</u>;

sequentially depositing a membrane layer, a lower electrode layer, an active layer, and an upper electrode layer on the sacrificial layer by plasma enhanced chemical vapor deposition (PECVD);

sequentially patterning the upper electrode layer, the active layer, and the lower electrode layer;

depositing an upper protective layer to cover the upper electrode layer, the lower electrode layer, and the active layer;

patterning the upper protective layer to be connected to the lower electrode layer and the upper electrode layer, and then depositing a connecting pad layer and patterning the connecting pad layer to form a first connecting pad to be connected to the lower electrode layer and a second connecting pad to be connected to the upper electrode layer; and

patterning the membrane layer to expose the sacrificial layer and removing the sacrificial layer.

2. (Original) The method as claimed in claim 1, wherein the substrate is formed of a flexible high molecular material.

3. (Original) The method as claimed in claim 1, wherein the substrate is formed of a material selected from the group consisting of polymer, polyimide, and metallic thin film.

4. (Original) The method as claimed in claim 1, further comprising:

forming a lower protective layer by depositing either silicon nitride or silicon oxide on the flexible substrate, before depositing the sacrificial layer on the flexible substrate.

5. (Original) The method as claimed in claim 4, wherein the lower protective layer is formed by either PECVD or sputtering.

6. (Original) The method as claimed in claim 5, wherein the lower protective layer is formed at a temperature of less than about 400 °C.

7. (Original) The method as claimed in claim 4, wherein the lower protective layer has a thickness of less than about 10 μm.

8. (Original) The method as claimed in claim 1, wherein forming the sacrificial layer is performed by coating a polyimide layer on the substrate and patterning the coated polyimide layer by either a wet etching or a dry etching in accordance with a configuration of the membrane layer.

9. (Original) The method as claimed in claim 1, wherein the sacrificial layer is formed to a thickness of less than about 10 μm.

10. (Original) The method as claimed in claim 1, wherein the membrane layer is formed of silicon nitride.

11. (Original) The method as claimed in claim 1, wherein the membrane layer is deposited using PECVD.

12. (Original) The method as claimed in claim 1, wherein the membrane layer has a thickness of less than about 5 μm.

13. (Original) The method as claimed in claim 1, wherein patterning the membrane layer is performed by a dry etching.

14. (Original) The method as claimed in claim 1, wherein the upper electrode layer and the lower electrode layer are formed of a material selected from the group consisting of metals and electrically conductive polymers.

15. (Original) The method as claimed in claim 1, wherein the first connecting pad and the second connecting pad are formed of a material selected from the group consisting of metals and electrically conductive polymers.

16. (Original) The method as claimed in claim 1, wherein the lower electrode layer has a thickness of between about 0.01 μm to 5 μm.

17. (Original) The method as claimed in claim 1, wherein the upper electrode layer has a thickness of between about 0.01 μm to 5 μm.

18. (Original) The method as claimed in claim 1, wherein the active layer is formed by depositing a piezopolymer on the lower electrode layer.

19. (Previously Presented) The method as claimed in claim 18, wherein the piezopolymer is deposited by one of a spin coating and an evaporation.

20. (Original) The method as claimed in claim 18, wherein the piezopolymer is selected from the group consisting of PVDF, PVDF-TrEF, TrEF, Polyurea, polyimide and Nylon.

21. (Original) The method as claimed in claim 1, wherein the active layer is formed to a thickness of between about 1 μm to 10 μm.

22. (Original) The method as claimed in claim 1, wherein the active layer has a resonance frequency of between about 1 Hz to 100 kHz.

23. (Original) The method as claimed in claim 1, wherein the active layer has a length of between about 50 μm to 1000 μm.

24. (Original) The method as claimed in claim 1, wherein patterning the active layer is performed by either a wet etching or a dry etching.

25. (Original) The method as claimed in claim 1, wherein the upper protective layer is formed of either silicon nitride or silicon oxide.

26. (Original) The method as claimed in claim 1, wherein the upper protective layer has a thickness of between about 1 μm to 10 μm.

27. (Original) The method as claimed in claim 1, wherein the upper protective layer is deposited using PECVD.

28. (Original) The method as claimed in claim 1, wherein patterning the upper protective layer is performed by either a wet etching or a dry etching.

29. (Previously Presented) The method as claimed in claim 1, wherein the PECVD includes heating to a temperature not exceeding about 400 °C

30. (Previously Presented) The method as claimed in claim 1, wherein the active layer is a polymeric piezoelectric layer.

31. (Previously Presented) A method of manufacturing a MEMS device on a flexible substrate, comprising:

providing a flexible substrate having a substantially planar surface; and

forming a MEMS device on the planar surface, wherein forming the MEMS device includes:

forming a sacrificial layer on the planar surface, the sacrificial layer having a lower surface facing the planar surface and an upper surface spaced above the planar surface by a predetermined distance, the upper surface parallel to the lower surface;

depositing a membrane layer on the planar surface and on the sacrificial layer;

forming an actuator on the membrane layer;

exposing a portion of the sacrificial layer; and

removing the sacrificial layer, wherein removing the sacrificial layer leaves a cavity defined in part by the planar surface and in part by the membrane layer.

32. (Previously Presented) The method of manufacturing a MEMS device on a flexible substrate as claimed in claim 31, wherein the sacrificial layer has a side surface extending from the lower surface to the supper surface, and wherein the side surface is not covered by the membrane layer.

33. (Previously Presented) The method of manufacturing a MEMS device on a flexible substrate as claimed in claim 32, wherein a first side of the cavity is defined by the membrane layer and the cavity has an open side opposite the first side.

34. (Previously Presented) The method of manufacturing a MEMS device on a flexible substrate as claimed in claim 31, wherein forming the actuator includes forming a lower electrode layer, an active layer and an upper electrode layer on the sacrificial layer by a vapor deposition process, and wherein forming the lower electrode layer, the active layer and the upper electrode layer includes heating to a temperature not exceeding about 400°C.

35. (Previously Presented) The method of manufacturing a MEMS device on a flexible substrate as claimed in claim 31, wherein the flexible substrate is a polymer, a polyimide, or a metallic thin film.